	Application No.	Applicant(s)
Notice of Allowability	10/073,628	KIMELMAN ET AL.
	Examiner	Art Unit	
	Satish S. Rampuria	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to <u>09/14/2007</u>.

2. ☒ The allowed claim(s) is/are <u>13,15-19,21-28 (renumbered as 1-14)</u>.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None of the:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☒ Interview Summary (PTO-413), Paper No./Mail Date <u>10/31/07</u> .

7. ☒ Examiner's Amendment/Comment

8. ☐ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

DETAILED ACTION

This action is in response to the amendment filed on 09/14/2007.

Claims 13, 15-19, 21-28 are allowed.

Claims 13-24 are amended by the Applicant.

New claims 25-28 are added.

Claims 14 and 20 are cancelled with this Examiner's amendment.

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes

and/or additions be unacceptable to applicant, an amendment may be filed as provided

by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be

submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with

BUCHENHORNER, MICHAEL [Reg. No. 33,162] on 10/31/07.

In the claims

Please amend claims 13, 15, 19 and 21-24 as follows.

Claim 13 (Currently amended) A method for minimizing total cost of interaction among

at least a pair of components of a computer program, each of the components being

characterized by one or more data representation properties, the properties comprising

string representation and data structure, the method comprising steps of:

a) carrying out at least a partial run of the program;

b) monitoring the at least partial run of the program to ~~measure an amount of~~

capture information on interaction between each pair of components, <u>wherein the</u>

<u>information on interaction comprises information relating to an explicit request from one</u>

<u>component of the pair to the other component of the pair for some data, and wherein</u>

<u>the monitoring comprises recording a source component, a destination component, and</u>

<u>an amount of data</u>;

c) determining a cost of interaction between each pair of interacting components;

d) determining a ~~choice~~ <u>set of interrelated choices</u> of the data representation properties

of each of the components of at least one group of components which minimizes total

cost of the at least partial run;

e) assigning the ~~choice~~ <u>set of interrelated choices</u> of the properties to the components

for a subsequent at least partial run of the program<u>; and</u>

<u>wherein the data representation properties comprise ~~comprising~~ a choice of</u>

<u>string representation of a component, and the amount of interaction measured in</u>

<u>step (b) comprises ~~comprising~~ a frequency of interaction between each pair of</u>

<u>interacting components; the cost of interaction comprising a function of the</u>

<u>frequency and a cost of converting any differing string representations of the pair</u>

<u>to a common string representation</u>.

Claim 15 (Currently amended) The method as set forth in ~~claim 14~~ **claim 13**, wherein

at least one string representation is selected from ASCII, UNICODE, and EBCDIC.

Claim 19 (Currently amended) A computer readable <u>storage</u> medium including computer instructions for carrying out a method for minimizing total cost of interaction among components, each of the components being characterized by one or more data representation properties ~~comprising string representation and data structure,~~ of a computer program running on a computer system, the medium comprising instructions for:

a) carrying out at least a partial run of the program;

b) monitoring the at least partial run of the program to measure an amount of interaction between each pair of components<u>, wherein an interaction comprises an explicit request from one component of the pair to the other component of the pair for some data, and wherein monitoring comprises recording a source component, a destination component and an amount of data</u>;

c) determining a cost of interaction between each pair of interacting components;

d) determining a ~~choice~~ <u>set of interrelated choices</u> of the <u>data representation</u> properties <u>of each of the components of at least one group of components</u> which minimizes total cost of the at least partial run; ~~and~~

e) assigning the ~~choice~~ <u>set of interrelated choices</u> of the properties to the components for a subsequent at least partial run of the program<u>; and</u>

<u>wherein the data representation property comprising a choice of string representation of a component, the amount of interaction measured in instruction (b) comprising a frequency of interaction between each pair of interacting</u>

components; the cost of interaction comprising a function of the frequency and a

cost of converting any differing string representations of the pair to a common

string representation.

Claim 21 (Currently amended) A-The computer readable **storage** medium as set forth

in ~~Claim~~ **claim 19**, wherein at least one string representation is selected from ASCII,

UNICODE, and EBCDIC.

Claim 22 (Currently amended) The computer readable **storage** medium as set forth in

~~Claim~~ claim 19, the **data representation property** ~~properties~~ comprising a choice of data

structure of a component, the amount of interaction measured in step (b) comprising a

frequency of interaction between each pair of interacting components; the cost of

interaction comprising a function of the frequency and a cost of converting any differing

choices of data structures of the pair to a common choice of data structure.

Claim 23 (Currently amended) The computer readable **storage** medium as set forth in

~~Claim~~ claim 22, wherein at least one data structure is selected from hash, tree, and

compressed data structures.

Claim 24 (Currently amended) The computer readable **storage** medium as set forth in

~~Claim~~ claim 19 wherein the instruction (d) of determining the choice is carried out by

building a graph with nodes representing program components and edges that join

adjacent nodes representing interaction therebetween, each edge being characterized

by a cost of each interaction, then using a graph cutting technique to find a minimum cut

of the graph.

--END--

Any comments considered necessary by applicant must be submitted no later than

the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Satish S. Rampuria whose telephone number is (571)

272-3732. The examiner can normally be reached on 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Wei Y. Zhen can be reached on (571) 272-3708. Any inquiry of a general

nature or relating to the status of this application should be directed to the TC 2100

Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published

applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

Satish S. Rampuria
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Art Unit 2191

WEI ZHEN
SUPERVISORY PATENT EXAMINER